FACULTY PERCEIVED BARRIERS OF ONLINE EDUCATION AT A MIDWESTERN UNIVERSITY IN OHIO

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This study extended research conducted by Lloyd et al. (2012) and investigated faculty perceived (interpersonal, institutional, training/technology, and cost/benefit) barriers to online education. Statistical analysis revealed three major items: (1) faculty continues to experience barriers to online education; (2) faculty is receiving training and guidance in order to become more comfortable, and knowledgeable in online settings; and, (3) as faculty online experience increases, the perceived barriers decrease. Additionally, faculty provided detailed comments validating ongoing interpersonal, institutional, training/technology, and cost/benefit analysis barriers in online education. The data was collected from a Midwest public university.

INTRODUCTION

According to the *Condition of Education 2019* report (McFarland et al., 2019), online enrollment in higher education continues to escalate, with 5.5 million students participating in online education in fall 2017. Additionally, 2.2 million students, or 13% of the total undergraduate enrollment, took courses entirely online. Between 2017 and 2028, the overall undergraduate enrollment will increase to 17.2 million students. Additionally, from fall 1999 to fall 2017, faculty in higher education increased 49%, from 1.0 to 1.5 million.

The *Condition of Education 2019* report is an annual verification mandated by Congress to summarize the latest data on education in the United States. Local, state, and national governments continue to implement a host of initiatives, such as improving student retention and completion rates, cultivating educational programs, increasing professional development activities, advancing technology, and developing academic leadership (Jolley et al.,

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2014). The exponential demand for online options in higher education directly affects faculty. Therefore, this current research will focus on understanding faculty perceived barriers to online education to advance research in this area.

This study expands on the research conducted by Lloyd et al. (2012), which stated that major factors affecting faculty's perceptions of online learning include: (1) interpersonal barriers, (2) institutional barriers, (3) training/technology barriers, and (4) cost/benefit analysis barriers. As online learning continues to be demanded by students, colleges have constantly increased online offerings due to the advancement of computer technologies. Faculty are tasked to accept new challenges via online education. Higher education would benefit from understanding major factors affecting faculty perceptions of online learning. A significant benefit would include innovative guidance and new opportunities for improvement in online education programs. "The advancement of online education has transformed the availability of higher education. Technology and adaptable curricula formats have expanded the speed, methods, and approaches in both traditional and nontraditional education environments" (Fogle et al., n.d.). Higher education continues to face changes.

As described by Windes and Lesht (2014), the dramatic changes faced by higher education can be explained within the framework of disruptive innovation theory. This theory suggests two types of technological change: supporting and disruptive changes. The authors note that a supporting or sustaining innovation serves the needs of existing customers and provides some enhancements; however, it does not result in major changes to the market or its audience. In contrast, disruptive innovation ultimately replaces services or products because they are more accessible to a population of customers, enabling new companies to develop and then dominate the industry. Therefore, as emphasized by Windes and Lesht (2014):

> Many have pointed to online education as a disruptive innovation within higher education. Students that were not well served by traditional colleges have seen their options increase as the number of online courses and programs has grown. While initially resistant, many higher education institutions are now attempting to compete with early adopters by developing online programs to reach this underserved market. (p. 1)

The Ohio Faculty Council, which represents all of the faculty at all 4-year public universities in Ohio, advised that higher education in Ohio is at a crossroads and must make it easier for students to attend college and earn quality affordable degrees. "Today, 45% or more of working-age adults in other states like Massachusetts, Maryland, and Virginia have 2- or 4-year degrees compared to only 36% of working-age adults in Ohio" (Ohio Faculty Council, 2014, para. 2).

As noted by Ohio Faculty Council, a major strategy for Ohio includes a personalized academic program of study, which will ideally include the option of courses from Ohio Public institutions delivered in the online learning format. However, throughout the literature, it is noted that faculty continue to resist online education.

Statement of Problem

Faculty continue to express fears and concerns about online education (Davis & Jacobsen, 2014; Eickholt, 2016; Fogle et al., n.d.; Gillett-Swan, 2017; Glass, 2017; Reid, 2014), and they are reluctant to teach in the online format. Online education, which has been recognized as an emergent and profitable field, has developed into a permanent fixture in mainstream higher education (Luongo, 2018). Students and employers continue to laud online education because location and scheduling issues are expunged. Higher education administrators continue to examine cost-effectiveness and surges in enrollment due to evolving technologies. As reported by Seaman et al. 2018:

> The proportion of the higher education student body taking advantage of distance education courses has increased over the last 4 years. It stood at 25.9% in 2012, at 27.1% in 2013, 28.3% in 2014, and 29.7% in 2015. (p. 11)

Even after a decade of significant growth in the number of universities with online offerings and students taking these courses, the level of uncertainty related to online learning amongst faculty remains high (Allen & Seaman, 2016).

Wingo et al. (2017) state that in the United States, faculty are being tasked to teach online at a phenomenal rate. Faculty are hesitant and reluctant to embrace online teaching due to: (1) interpersonal barriers, (2) institutional barriers, (3) faculty training/technology barriers, and (4) cost/benefit analysis barriers (Lloyd et al., 2012). Administrators and faculty need to discuss numerous policy items and issues concerning online environments. Obstacles faced at various stages of online education noted by Berge and Muilenburg (as cited in Reid, 2014) include: administrative structure, legal issues, organizational change, technical expertise support, student support services, access, threatened by technology, faculty compensation, and time, social interaction and quality, evaluation/effectiveness (p. 384)

Faculty are increasingly challenged to rethink their underlying assumptions about teaching and learning online and the roles they take as instructors (Luongo, 2018). Luonogo also reminds us that the perceived lack of institutional and departmental support is one of the biggest deterrents to teaching online. In the meantime, the competition has created other avenues such as edx and coursea. Understanding faculty perceived barriers to online education might assist in reducing barriers in this environment.

Purpose of the Study

This study aims to understand if and why faculty members have perceived barriers to online education. Based on a review of faculty perceived barriers in higher education (Allen & Seaman, 2016; Capra, 2011; King & Arnold, 2012; Lloyd et al., 2012), more research is needed to comprehend this topic. This descriptive quantitative study intended to use the results to assist institutions as they cultivate training programs and faculty recruitment policies for online education to meet the growing demand for this type of instruction. The findings of this study contributed to the body of knowledge in faculty development, online learning, and higher education administration.

METHODOLOGY

Some researchers use survey research to denote almost any form of descriptive, quantitative research (Leedy & Ormrod, 2013). This current study intended to use survey research to acquire information about one or more groups of university faculty and their characteristics, opinions, attitudes, and previous experience with online education by asking questions and tabulating their answers. This study also intends to investigate the relationship between faculty members' demographic characteristics and interpersonal, institutional, training/technology, and cost/benefit analysis barriers. Questions will be answered using an online self-report survey instrument, and the responses will be analyzed quantitatively.

Research Questions

The study attempts to answer the following research questions:

1. Is there a significant difference in faculty perceived institutional barriers for online education based on full-time status?
2. Is there a significant difference between faculty-perceived institutional barriers for online education and years of online teaching?
3. Is there a significant relationship between faculty-perceived institutional barriers to online education and age?

4. Is there a significant difference between faculty-perceived interpersonal barriers and gender?
5. Is there a significant difference in faculty perceived technology barriers and previous online courses related to online teaching?

Instrument

The survey instrument proposed as the foundation for this study was created by Lloyd et al. (2012) for a study of faculty perceived barriers to online education at North Georgia College and State University. "There are advantages to using existing instruments, particularly if they have already been validated and reported to be reliable. Reusing an existing survey may also allow for an additional point of reference and comparison" (Eickholt, 2016, p. 3). The noted survey instrument was "pilot-tested twice in order to assess the face validity and clarity of the questions (pilot test #1) as well as the ease of use of the web-based survey tool and reporting formats (pilot test #2)" (Lloyd et al., 2012, pp. 3–4). Lloyd et al. (2012) sent three email requests for faculty members' participation, informed consent, and a URL to access the online survey. It was also noted that all procedures were conducted according to and approved by the North Georgia College and State University's Institutional Review Board.

This present-day research study will augment the 37-item questionnaire constructed, distributed, and used in the online survey at North Georgia College and State University by the researchers. This researcher received an email confirmation to use the North Georgia College and State University's online survey (S. Lloyd, personal communication, September 1, 2014).

The instrument for this present study was a self-report questionnaire with four sections. The first section of the questionnaire contained seven questions that measured online faculty members' experience and perception of online education. The second section contained 21 questions that measured faculty perceptions of barriers to online education on a Likert scale. The Likert scale asked the participants to rate the extent to which they strongly disagree, disagree, agree, or strongly agree with the various statements concerning online teaching and learning barriers. The third section was an open-ended question that asked the participant to list their experience with other barriers to online education. Finally, section four was the demographics area, which contained six questions.

The population for this study included faculty teaching at least one face-to-face or online course during the academic year 2019–2020 semester at a 4-year degree-granting public Midwestern university. Faculty included those teaching undergraduate and graduate degree programs, approximately 800 participants.

Data Collection

During the academic year 2019/2020, the Midwestern university's office of institutional research sent the recruitment email via the university's email system (online) to all faculty teaching at least one face-to-face or online course and invited them to participate in the study. The email contained a consent letter informing the faculty members of their rights as participants. If the faculty member elected to participate, they clicked a link to Qualtrics that was available to complete the anonymous questionnaire.

Data Analysis

The statistical tests used included the following:

- One-way ANOVA—this exploration includes only one independent variable with more than two levels.
- Independent samples *t* test—Compares two sample means to determine whether the population means are significantly different.

- Pearson correlation—and analysis of the linear relationship between two variables, the Pearson *r*.

RESULTS

During 201–2020, the Midwestern university's office of institutional research sent a recruitment email via the university's email system (online) to faculty teaching at least one face-to-face or online course and invited them to participate in the study.

Listed are the colleges within the Midwestern university which were sent an invitation to participate in the study: arts and letters, business innovation, education, engineering, health and human services, law, natural sciences and mathematics, nursing, and pharmacy and pharmaceutical sciences. Of the 792 faculty members who were sent an email invitation, 115 faculty members completed the survey from October 29, 2019, until December 4, 2019. A response rate of (14.5%) was the result. The demographic characteristics of the participants are illustrated in Table 1, which include gender, faculty status, academic rank, experience with online education, perceived level of comfort and proficiency with technology for online teaching, and years of online teaching.

Research Questions. In addition to providing data analysis for the research questions, respondents provided rich qualitative data in the open-ended question in the survey.

Research Question #1: Is there a significant difference in faculty perceived institutional barriers based on full-time status for online education?

As shown in Table 2, an independent samples *t* test was used to determine whether differences existed in the mean score for perceived institutional barriers based on full-time and part-time faculty rank. As shown in Table 2, there were no statistically significant differences in the score ($p<.05$) for any perceived institutional barriers.

Comment from a part-time instructor:

> I am a part-time instructor with a full-time (50+ hours) administrative job. I teach a mixed class of in-class and distance learners. My method of teaching involves several hands-on team workshops, and it is very difficult to give the DLs the same experience with the hands-on exercises. I did try to take a course in online teaching, but it involved more time than I could dedicate due to full-time responsibilities, and it seemed to start at a level above my starting point.

Comment regarding academic support:

> If a chair is not supportive of online course development, they don't encourage their faculty to design courses.

Research Question #2: Is there a significant difference between faculty-perceived institutional barriers for online education and years of online teaching?

As shown in Table 3, a one-way ANOVA test was used to determine the difference between the four groups (never taught online, 1–4 years, 5–8 years, and 8+ years). There were no statistically significant differences; however, the 8+ years group had a lower mean than the other groups.

One respondent has been teaching since 2002:

> The online learning division should be marketing our programs. Many UToledo online programs are certified through Quality Matters. UToledo online courses offer direct access to the instructor, usually within 24–48 hours, as is not the case with on-campus courses.

One respondent commented on the benefits of online education:

> Online courses help students beyond the expected coursework in that scheduling/planning, time management, and project management are learned, enhancing skills for undergrad and graduate students.

TABLE 1

Demographic Characteristics of Respondents

Demographic	*N*	*% of Sample*
Gender		
Male	39	33.9
Female	58	50.4
Prefer not to answer	9	7.8
Missing	9	7.8
Faculty Status		
Full-time	78	67.8
Part-time	24	20.9
Missing	13	11.3
Academic Rank		
Professor	22	19.1
Associate professor	18	15.7
Assistant professor	14	12.2
Lecturer	23	20.0
Visiting instructor	1	0.9
Other	28	24.3
Missing	9	7.8
Experience With Online Education		
No experience	40	34.8
Taught online course	69	60.0
Missing	6	5.2
Perceived Level of Comfort and Proficiency With Technology for Online Teaching		
Not comfortable	13	11.3
Sort of comfortable	47	40.9
Very comfortable	47	40.9
Missing	8	7.0
Years of Online Teaching		
Never	39	33.9
1–4 years	28	24.3
5–8 years	14	12.2
8+ years	24	20.9
Missing	10	8.7

TABLE 2

Independent Samples t Test by Institutional Barriers Full and Part Time

	Full Time		*Part Time*			
	M	*SD*	*M*	*SD*	*t(99)*	*p*
Perceived institutional barriers	26.8	5.5	26.7	4.3	0.11	>.05

TABLE 3

ANOVA Institutional Barriers Based on Years of Teaching Online

	Never Taught Online		*Taught Online 1–4 Years*		*Taught Online 5-8 Years*		*Taught Online 8+ Years*			
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F (3, 100)*	*p*
Perceived institutional barriers	28.1	4.9	28.6	4.6	26	3.5	22.7	5.4	8.19	0.001

TABLE 4

Pearson Correlation by Institutional Barriers Based on Age

Measure	*1*	*2*
1. Age	—	
2. Perceived institutional barriers	–0.15	—

Online learning provides helplines, tutorials, and other support materials for students. This also improves student communication skills, both verbal and written. I see no downside to online teaching other than an instructor who does not fully put in the time and energy to transform their on-campus course into a quality online course. I have been teaching online since 2002. I have used WebCT and Blackboard, but I am also familiar with Canvas, Moodle, and many others.

On the other hand, a respondent with no online teaching experience proclaimed:

> I would like to teach, but getting over the first hump is a little scary. If I had more hands-on support from other faculty who have taught online or modules that could improve my online skills, I think that would help.

Additionally, some respondents did not have any barriers: None. In fact, I get far more participation in online classes than I do face to face.

This respondent favored face-to-face instruction: There is empirical evidence that face-to-face instruction results in better learning than the disembodied online experience.

Research Question 3: Is there a significant relationship between faculty perceived institutional barriers to online education and age?

As shown in Table 4, a Pearson correlation was used to determine a relationship between age and perceived institutional barriers. The test showed that a negative relationship existed. As age increased, perceived institutional barriers decreased. Alternatively, as age decreased, perceived institutional barriers increased.

Research Question 4: Is there a significant difference between faculty perceived interpersonal barriers and gender?

As shown in Table 5, an independent samples *t* test was used to determine whether differences existed in the mean score for perceived interpersonal barriers based on gender. As shown in Table 5, there were no statistically significant differences in the score ($p < .05$) for any perceived institutional barriers.

Faculty illustrate some of the perceived interpersonal barriers that exist based on gender:

> As a Black female professor, students are less respectful to me than their White and male counterparts. They either plead for me to change their grades, and if I maintain the integrity of my grading policy, they retaliate by writing negative evaluations. They do address me by my first name and or attempt to question the integrity of my expertise in the subject.

This comment discussed the difficulties of online environments:

> I am resistant to online teaching because I feel strongly that the most valuable parts of college are meeting your classmates and professors, having to show up on time, and the dialogue that happens in class. I associate online-heavy curricula with unaccredited, for-profit universities, not with legitimate institutions. I enjoy students and want to get to know them, which is difficult in an online setting. I also sense that the emotional labor component of teaching is extremely limited for online-only faculty. They don't have to stand in front of students or develop relationships with students, so they don't get asked for letters of recommendation, advice on job interviews, or questions that face-to-face faculty do. My sense is that students don't take online courses as seriously as their face-to-face classes. Students will freely admit even to faculty that they take online classes because they are "easy" or because they can use the book during tests. That is highly problematic.

This respondent commented on instructor creativity, morale, and motivation:

I think that some of the barriers listed about being impersonal can be true, but it is up to the instructor to ensure that the online class is finding ways to make it more personable. However, this also makes it a much more time-consuming class to teach. It is harder to engage students who are only taking an online class, so they don't have to "show up" to a physical class. That mindset can be a barrier for instructors. Adjunct instructors might also feel less connected to the department and other instructors if they are not physically present. Having a connection with other faculty in the department can help with creativity, morale, and motivation.

Research Question 5: Is there a significant difference in faculty perceived technology barriers and previous online courses related to online teaching?

As shown in Table 6, an independent samples *t* test was used to determine whether differences existed in the mean score for perceived technology barriers based on if the respondent has taken previous online courses in relation to online teaching (yes or no). As shown in Table 5, there were no statistically significant differences in the score ($p < .05$) for any perceived institutional barriers.

This respondent discussed technology barriers:

> It sometimes feels more difficult to create meaningful, active discussions or activities to engage students. There are always options to use discussion boards and have students create short videos; however, it feels to me there is always a challenge in engaging students online compared to in-classroom.

Comments below state optional forms of technology:

TABLE 5

Independent Samples t Test by Interpersonal Barriers and Gender

	Male		*Female*			
	M	*SD*	*M*	*SD*	*t(94)*	*p*
Perceived interpersonal barriers	14.2	3.5	14	3.7	0.83	>.05

TABLE 6

Independent Samples t Test by Technology Barriers and Previous Courses

	Male		*Female*			
	M	*SD*	*M*	*SD*	*t(103)*	*p*
Perceived interpersonal barriers	4.1	1.4	4.3	1.2	–0.69	>.05

> If you have a good platform like Zoom where you can see each other and divide into virtual small discussion groups, share your screen, and do the class in real time, it is a really great way to teach and learn. It's more inclusive for distance learners. I do think that there is something different that happens in a face-to-face situation that is in person that is different from the online. I am not sure if it's different enough that the lack of face to face is a barrier. It might be better to have blended classes, some online class times, and some in-person, especially for health and human services, where dealing with people in person is part of the profession.

Other Technology Concerns: Poor support of computer hardware and software from the university needed for effective course development and monitoring and availability of training to use the online system.

CONCLUSIONS

This study aimed to understand if and why faculty members have perceived barriers to online education. Results indicated that faculty continues to experience various barriers online. However, faculty report being comfortable in the online environment and continue to embrace this form of educational delivery.

Based on the specific research questions, faculty in this study do not have perceived institutional barriers based on full-time status. Results also revealed that faculty perceived institutional barriers decrease as faculty online experience increases. Additionally, there are no perceived interpersonal barriers based on gender; and no perceived technology barriers based on previous online classes taken concerning online teaching. There is a relationship between age and perceived institutional barriers; as age increased, perceived institutional barriers decreased.

On the other hand, faculty comments provided rich, practical, and extensive documentation of ongoing interpersonal, institutional, training/technology, and cost/benefit analysis barriers. The study also highlighted additional critical barriers experienced by faculty: the lack of student preparation in the online environment, issues with learning management systems, and questionable support of academic leaders toward online education. The online environment has become even more integral to scholarship based on the pandemic health concerns throughout the world.

Online education is no longer just a preference. Administrators, faculty, and students are on notice of the urgency and significance of this form of educational delivery. Planning must also include the transformation of face-to-face courses to online delivery. Additionally, faculty will benefit from intense professional development, training, and open conversations, including focus groups composed of administration, faculty, and students. Online education continues to evolve, and higher education advances and embraces this challenge.

This research study sought to understand why faculty continue to express fears and concerns in online environments. The data provided generous examples of current interpersonal, institutional, training/technology, and cost/benefit analysis barriers. The significance of the study provides administrators with guidance and opportunities to improve current practices in the development of online education. Guidance includes under-

standing the technology acceptance model, online education, and pedagogy and tackling the critical barriers from question #29. The domain of education has changed forever, and it continues to face new challenges worldwide. This research proves that it is imperative to address faculty's perceived barriers in the "ever-changing digital world" called online education.

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